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612.40180X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: DURIEZ, et al.

Serial No.: 09/887,066

Filed: June 25, 2001

For: Transport Device for Analyzing Hydrocarbon Containing Constituents

Group: 1743

Examiner: S. SIEFKE

REQUEST FOR REINSTATEMENT OF APPEAL

United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

May 23, 2005

Sir:

In the matter of the above-identified application, Applicants hereby respectfully request the reinstatement of the appeal. This Request is accompanied by a supplemental appeal brief.

It is respectfully requested that any shortage in the fee be charged to the account of Antonelli, Terry, Stout & Kraus, LLP, Account No. 01-2135 (612.40180X00) and excess fees credited to account.

Respectfully submitted,

Alan E. Schiavelli
Registration No. 32,087
ANTONELLI, TERRY, STOUT & KRAUS, LLP

AES/at
(703) 312-6600

612.40180X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants: DURIEZ et al

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APPELLANTS' SUPPLEMENTAL BRIEF

Mail Stop: Appeal Brief - Patents
Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

May 23, 2005

Sir:

Appellants are filing this Supplemental Appeal Brief with their Request for Reinstatement of Appeal.

REAL PARTY IN INTEREST

The real party in interest is Institut Francais du Petrole, the assignee of the subject application.

RELATED APPEALS AND INTERFERENCES

Upon information and belief, there is no other prior or pending appeal, interference or judicial proceeding known to appellants, appellants' legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

STATUS OF CLAIMS

An Amendment After Final Rejection was filed October 18, 2004. That Amendment has been entered. See the advisory action mailed November 17, 2004.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 9 is directed to an analysis and/or measuring device. The invention may be advantageously applied to mud logging operations, which include measuring while drilling, notably the drilling fluid back flow. See, page 1, lines 2 - 5 of appellants' specification. The device includes means for extracting, in the gaseous form, hydrocarbons contained in a liquid drilling fluid after drilling in a reservoir rock. One example of the means for extracting is shown in Figure 8 and described at page 8, line 17 et. seq. of appellants' specification as a degaser. The device also includes means for transporting the extracted gases and means intended for analysis and measurement on these extracted gases. The means for transporting the extracted gases may take the form of, e.g., a transport line 21 shown in Figure 8. The means intended for analysis and

measurement on these extracted gases can include a measurement or analysis plant 22, as shown in Figure 8. See, e.g., page 8, lines 17 - 20 of appellants' specification.

The means for transporting the extracted gases in such an analysis and/or measuring device is typically a tubular line which is several tens of meters long, e.g., 50 meters, separating the well head from the analysis and measurement means that are typically situated in a mud logging shelter separate from extractor. Retention, adsorption and absorption phenomena in the tubular line can lead to erroneous qualitative analysis results and make quantification difficult or even impossible. See, the paragraph bridging pages 1 and 2 of appellants' specification.

According to the present invention, the transport means include a tubular line comprising an inner tube which limits retention of trace hydrocarbons and is made from at least one plastic selected from the group consisting of PTFE (polytetrafluoroethylene), FEP (tetrafluoroethene-periluoroprene copolymer), PVDF (polyvinylidene fluoride), ETFE (tetrafluoroethylene-ethylene copolymer), ETFCE (ethylene-trifluorochlorethylene copolymer), PCTFE (polychlorotrifluoroethylene), FPA (perfluoroalkoxyalkane), hexafluoropropylene/vinylidene fluoride copolymers, hexafluoropropylene/vinylidene fluoride/tetrafluoropropylene THV terpolymers, tetrafluoroethylene/hexafluoropropylene/treated vinylidene fluoride, PEEK (polyetherether ketone), PEKK, PAEK, PEK, and aliphatic polyketones. See, page 2, lines 9 - 21 of appellants' specification.

As set forth in dependent claims 11 and 12, the thickness of the inner tube ranges between 0.1 and 0.5mm, preferably between 0.1 and 0.2mm. See, page 10, lines 2 - 3 of appellants' specification.

Dependent claims 13 and 14 specify that the inside diameter of the inner tube ranges between 3 and 12mm, preferably between 6 and 10mm. See, e.g., page 3, lines 6 - 7 of appellants' specification.

Claim 15 specifies that the tubular line is several ten meters long. See, e.g., page 1, lines 12 - 13 of appellants' specification.

Independent claim 16 relates to the method for analysis and/or measuring of the present invention. See, e.g., page 1, lines 2 - 5 and original claim 6. The method includes extracting, in the gaseous form, hydrocarbons contained in a liquid drilling fluid after drilling in a reservoir rock, transporting the extracted gases, and analyzing or measuring the extracted gases. See, e.g., Figure 8 and the paragraph bridging pages 8 and 9 of appellant's specification. According to the method of the present invention, the extracted gases are transported in a tubular line comprising an inner tube which limits retention of trace hydrocarbons and is made from at least one plastic selected from the group consisting of PTFE (polytetrafluoroethylene), FEP (tetrafluoroethene-periluoroprene copolymer), PVDF (polyvinylidene fluoride), ETFE (tetrafluoroethylene-ethylene copolymer), ETFCE (ethylene-trifluorochlorethylene copolymer), PCTFE (polychlorotrifluoroethylene), FPA (perfluoroalkoxyalkane), hexafluoropropylene/vinylidene fluoride copolymers, hexafluoropropylene/vinylidene fluoride/tetrafluoropropylene THV terpolymers,

tetrafluoroethylene/hexafluoropropylene/treated vinylidene fluoride, PEEK (polyetherether ketone), PEKK, PAEK, PEK, and aliphatic polyketones. See, e.g., page 2, lines 9 - 21 of appellant's specification.

Claim 17 specifies that the inner tube is made of THV. See, e.g., page 2, lines 9-21 of appellants' specification.

Claim 18 indicates that the inner tube is externally protected by at least one other sheath. See, e.g., Figure 11 and page 9, line 21 to page 10, line 4 of appellants' specification.

As set forth in dependent claims 19 and 20, the thickness of the inner tube ranges between 0.1 and 0.5mm, preferably between 0.1 and 0.2mm. See, page 10, lines 2 - 3 of appellant's specification.

Dependent claims 21 and 22 specify that the inside diameter of the inner tube ranges between 3 and 12mm, preferably between 6 and 10mm. See, e.g., page 3, lines 6 - 7 of appellant's specification.

Claim 23 specifies that the tubular line is several ten meters long. See, e.g., page 1, lines 12 - 13 of appellant's specification.

GROUNDS OF REJECTION

Claims 9 - 23 stand rejected under 35 USC 103(a) as being unpatentable over United States Patent No. 5,090,256 to Issenmann in view of United States Patent No. 5,566,720 to Cheney et al.

ARGUMENT

Arguments Common To Claims 9 - 23

The patent to Issenmann discloses a method and apparatus for sampling the gaseous content of a liquid laden with solids. The method and apparatus involve sampling the liquid as close as possible to the source of the liquid. It is disclosed that a strainer housing having a strainer plate for filtering out debris in the liquid is connected to a suction pump for sucking the liquid into the housing and to the pump. The pump delivers the sampled liquid to a degassing device mounted on a frame within the pump. The degassing device agitates the liquid to liberate gases suspended therein. The gases are then collected from the degassing device so that the gases may be analyzed. A motor mechanism on the frame drives the pump a rotating agitator in the degassing device and a rotating scraper on the exterior of the strainer plate simultaneously. This method and apparatus are disclosed to be particularly applicable to the sampling of drilling mud from an oil well exploration site for purposes of analyzing the hydrocarbon content of the drilling mud. This patent discloses that a flexible tube 25 is connected to a nozzle 24 to conveying gases released from the liquid inside the container of the degassing device 23 to a collecting tube 26 mounted thereto. The collecting tube 26, in turn, delivers the gasses through a tube 27 to an analyzing device (not shown). However, absolutely no mention is made in Issenmann of the need to provide any of these tubes with an inner tube which limits retention of trace hydrocarbons.

The patent to Cheney et al relates to an elongated fuel and vapor tube having multiple layers. The tube is disclosed to be for conveying fluids containing

hydrocarbons and has an inner surface capable of prolonged exposure to the hydrocarbon-containing fluid made up of a melt processible fluoroplastic terpolymer composed of a polyfluorinated alkylene, and fluoro-olefin and a fluorinated vinyl compound. The tube is disclosed to be for use in a motor vehicle, in particular, as a fuel line or vapor recovery line in a motor vehicle. There is absolutely no suggestion in Cheney et al or in any of the prior art to use such a tube with the apparatus of Issenmann. Accordingly, there would have been no motivation to combine the teachings of Issenmann and Cheney et al in the manner urged by the Examiner.

In the Office Action mailed February 23, 2005, the Examiner indicates the motivation for combining the teachings of Issenmann and Cheney et al to be as follows:

> It would have been obvious to one having an ordinary skill in the art at the time to modify Issenmann to include the elongated fuel and vapor tube of Cheney because of the increased retention time of the hydrocarbons in the tubing during the transporting to the analyzer or the measurement means and to limit retention of trace hydrocarbons so that the samples can be analyzed in there (sic) purest form when transported from the degassing apparatus.

While certainly applicants teach limiting the retention of trace hydrocarbon in an analysis and/or measuring device and method, the prior art does not. That is, while the Issenmann patent relates to sampling the gaseous content of a liquid, it does not suggest limiting retention of trace hydrocarbons. While the Cheney et al patent discloses a tube having resistance to hydrocarbon permentation, the tube is used in e.g., a fuel line or vapor recovery line in a motor vehicle. Thus, the Cheney et al. patent also does not suggest limiting retention of trace hydrocarbons in an analysis and/or measuring device or

method. Accordingly, the motivation for combining the teachings of this amendment and Cheney et al set forth by the Examiner has come only from the teachings in Applicants' disclosure. To support a rejection under 103, the teaching or suggestion to make the claimed combination must be found in the prior art and not based on Applicants' disclosure. *In re Vaeck,* 947 F.2nd 488, 20 USPQ 2nd 1438 (Fed. Cir. 1991); Manual of Patent Examining Procedure (MPEP) 706.02 (j).

Moreover, the present invention solves the problems of retention, adsorption and absorption phenomena in the tubular line separating the well head from the analysis and measurement means, the tubular line being several tens of meters long (see claim 15), e.g., 50 meters long. The problems inherent in the use of such a tubular line are not disclosed by either Issenmann or Cheney et al and the solution of the present invention is certainly not suggested. The Cheney et al patent merely describes an inner layer which "exhibits resistance to the components contained in conventional gasoline fuel mixtures ...." There is no suggestion to use the tube of Cheney et al to limit retention of trace hydrocarbons and clearly no suggestion to use it in the apparatus of Issenmann. Accordingly, the presently claimed invention is patentable over the proposed combination of Issenmann and Cheney et al.

Claims 11, 12, 19, 20

As set forth in claims 11 and 19, the thickness of the inner tube ranges between 0.1 and 0.5mm. As set forth in claims 12 and 20, the thickness of the inner tube ranges between 0.1 and 0.2mm. These thicknesses are neither

disclosed nor suggested by Issenmann and/or Cheney et al.

While the Examiner alleges that the thickness of the inner tube "is considered a result effect variable," the Examiner has not shown where the prior art teaches that the thickness is a result effective variable. The only teachings relating to the thickness is given in Cheney et al and, it is submitted, the Cheney et al teaching would have taught away from the presently claimed thickness.

That is, while the Cheney et al patent discloses that vapor recovery tubes in automotive systems will generally have wall thicknesses between 0.5mm and about 0.2mm, with wall thickness of approximately 0.8 to approximately 1.5mm being preferred, it is indicated that the tube of Cheney et al exhibited characteristics of durability and stability and unexpected resistance to hydrocarbon permeation with a wall thickness between 0.8mm and about 1mm. Clearly such a thickness, i.e., 0.8 to 1mm is thicker than that claims in claims 11, 12, 19 and 20. Any attempt by the Examiner to attribute the described thickness of 0.8mm to 1mm to the layer 12 of Cheney et al is pure speculation. Accordingly, claims 11, 12, 19 and 20 are patentable over the combination of Issenmann and Cheney et al for this additional reason.

Claims 13, 14, 21, 22

According to claims 13 and 21, the inside diameter of the inner tube ranges between 3 and 12mm. Claims 14 and 22 indicate that the inside diameter of the inner tube ranges between 6 and 10mm. These inside diameters are neither disclosed nor suggested by Issenmann and/or Cheney et al. Again,

the Examiner alleges the diameter "is considered a result effective variable." Only the Cheney et al. patent discloses the diameter of the vapor tube and, rather than suggesting the present invention, teaches away from the present invention. That is, it appears the fuel and vapor tube 10 of Cheney et al has a larger inside diameter since the outer diameter is up to 50mm and a wall thickness of about 0.8mm to about 1mm are indicated to provide characteristics of durability and stability and unexpected resistance to hydrocarbon permeation. Accordingly, claims 13, 14, 21 and 22 are patentable for this additional reason.

Claims 15 and 23

Claims 15 and 23 recite that the tubular line is several ten meters long. Such a long tube exhibits problems of retention, adsorption and absorption phenomena in the tubular line. These problems are not disclosed by either Issenmann or Cheney et al and the solution of the present invention is certainly not suggested. The Cheney et al patent merely describes an inner layer which "exhibits resistance to the components contained in conventional gasoline fuel mixtures ...." There is no suggestion to use to the tube of Cheney et al to limit retention of trace hydrocarbons and clearly no suggestion to use it in the apparatus of Issenmann. Accordingly, the presently claimed invention, especially as set forth in claims 15 and 23 is patentable over the proposed combination of Issenmann and Cheney et al.

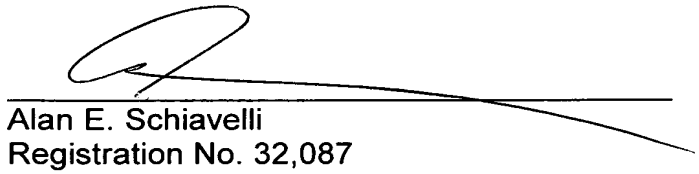
For the foregoing reasons, the final rejection of claims 9 - 23 should be

reversed.

Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, Deposit Account No. 01-2135 (Case: 612.40180X00), and please credit any excess fees to said deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



Alan E. Schiavelli
Registration No. 32,087

AES/at
(703) 312-6600

CLAIM APPENDIX

9. An analysis and/or measuring device comprising means for extracting, in the gaseous form, hydrocarbons contained in a liquid drilling fluid after drilling in a reservoir rock, means for transporting said extracted gases, and means intended for analysis and measurement on these extracted gases, characterized in that said transport means include a tubular line comprising an inner tube which limits retention of trace hydrocarbons made from at least one plastic selected from the group consisting of PTFE (polytetrafluoroethylene), FEP (tetrafluoroethene-periluoroprene copolymer), PVDF (polyvinylidene fluoride), ETFE (tetrafluoroethylene-ethylene copolymer), ETFCE (ethylene-trifluorochlorethylene copolymer), PCTFE (polychlorotrifluoroethylene), FPA (perfluoroalkoxyalkane), hexafluoropropylene/vinylidene fluoride copolymers, hexafluoropropylene/vinylidene fluoride/tetrafluoropropylene THV terpolymers, tetrafluoroethylene/hexafluoropropylene/treated vinylidene fluoride, PEEK (polyetherether ketone), PEKK, PAEK, PEK, and aliphatic polyketones.

10. A device as claimed in claim 9, wherein said inner tube is externally protected by at least one other sheath.

11. A device as claimed in claim 9, wherein the thickness of the inner tube ranges between 0.1 and 5 mm.

12. A device as claimed in claim 9, wherein the thickness of the inner tube ranges between 0.1 and 0.2 mm.

13. A device as claimed in claim 9, wherein the inside diameter of the inner tube ranges between 3 and 12 mm.

14. A device as claimed in claim 9, wherein the inside diameter of the inner tube ranges between 6 and 10 mm.

15. A device as claimed in claim 9, wherein said tubular line is several ten meters long.

16. A method for analysis and/or measuring comprising:

extracting, in the gaseous form, hydrocarbons contained in a liquid drilling fluid after drilling in a reservoir rock, transporting said extracted gases, and analyzing or measuring the extracted gases, wherein the extracted gases are transported in a tubular line comprising an inner tube which limits retention of trace hydrocarbons made from at least one plastic selected from the group consisting of PTFE (polytetrafluoroethylene), FEP (tetrafluoroethene-perfluoroprene copolymer), PVDF (polyvinylidene fluoride), ETFE (tetrafluoroethylene-ethylene copolymer), ETFCE (ethylene-trifluorochiorethylene copolymer), PCTFE (polychlorotrifluoroethylene), FPA (perfluoroalkoxyalkane), hexafluoropropylene/vinylidene fluoride copolymers,

hexafluoropropylene/vinylidene fluoride/tetrafluoropropylene THV terpolymers, tetrafluoroethylene/hexafluoropropylene/treated vinylidene fluoride, PEEK (polyetherether ketone), PEKK, PAEK, PEK, and aliphatic polyketones.

17. A method as claimed in claim 16, wherein said inner tube is made of THV.

18. A method as claimed in claim 16, wherein said inner tube is externally protected by at least one other sheath.

19. A method as claimed in claim 16, wherein the thickness of the inner tube ranges between 0.1 and 0.5 mm.

20. A method as claimed in claim 16, wherein the thickness of the inner tube ranges between 0.1 and 0.2 mm.

21. A method as claimed in claim 16, wherein the inside diameter of the inner tube ranges between 3 and 12 mm.

22. A method as claimed in claim 16, wherein the inside diameter of the inner tube ranges between 6 and 10 mm.

23. A method as claimed in claim 16, wherein said tubular line is several ten meters long.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None